United Nations

FCCC/SBI/ICA/2017/TASR.2/AND

Framework Convention on Climate Change

Distr.: General
21 August 2018

English only

Technical analysis of the second biennial update report of Andorra submitted on 2 August 2017

Summary report by the team of technical experts

Summary

According to decision 2/CP.17, paragraph 41(a), Parties not included in Annex I to the Convention (non-Annex I Parties), consistently with their capabilities and the level of support provided for reporting, were to submit their first biennial update report (BUR) by December 2014. Further, paragraph 41(f) of that decision states that non-Annex I Parties shall submit a BUR every two years, either as a summary of parts of their national communication in the year in which the national communication is submitted or as a stand-alone update report. As mandated, the least developed country Parties and small island developing States may submit BURs at their discretion. This summary report presents the results of the technical analysis of the second BUR of Andorra conducted by a team of technical experts in accordance with the modalities and procedures contained in the annex to decision 20/CP.19.

GE.18-13778(E)

1813778

Please recycle

Contents

		Paragraphs	*Page*
	Abbreviations and acronyms		3
I.	Introduction and process overview	1–9	4
	A. Introduction	1–5	4
	B. Process overview	6–9	4
II.	Technical analysis of the biennial update report	10–69	5
	A. Scope of the technical analysis	10–11	5
	B. Extent of information reported	12–14	5
	C. Technical analysis of the information reported	15–67	6
	D. Identification of capacity-building needs	68–69	13
III.	Conclusions	70–76	14
Annexes			
I.	Extent of the information reported by Andorra in its second biennial update report		16
II.	Documents and information used during the technical analysis		22

Abbreviations and acronyms

2006 IPCC Guidelines	*2006 IPCC Guidelines for National Greenhouse Gas Inventories*
AD	activity data
AFOLU	agriculture, forestry and other land use
BUR	biennial update report
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
COP	Conference of the Parties
EF	emission factor
GDP	gross domestic product
GEF	Global Environment Facility
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
ICA	international consultation and analysis
IPCC	Intergovernmental Panel on Climate Change
IPCC good practice guidance for LULUCF	*Good Practice Guidance for Land Use, Land-Use Change and Forestry*
MRV	measurement, reporting and verification
NA	not applicable
NC	national communication
NIR	national inventory report
NMVOC	non-methane volatile organic compound
non-Annex I Parties	Parties not included in Annex I to the Convention
NOx	nitrogen oxides
N_2O	nitrous oxide
PFC	perfluorocarbon
QA/QC	quality assurance/quality control
Revised 1996 IPCC Guidelines	*Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*
SF_6	sulfur hexafluoride
SOx	sulfur oxides
TTE	team of technical experts
UNFCCC guidelines for the preparation of NCs from non-Annex I Parties	"Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention"
UNFCCC reporting guidelines on BURs	"UNFCCC biennial update reporting guidelines for Parties not included in Annex I to the Convention"

I. Introduction and process overview

A. Introduction

1. The process of ICA consists of two steps: a technical analysis of the submitted BUR and a facilitative sharing of views under the Subsidiary Body for Implementation, resulting in a summary report and record, respectively.

2. According to decision 2/CP.17, paragraph 41(a), non-Annex I Parties, consistently with their capabilities and the level of support provided for reporting, were to submit their first BUR by December 2014. In addition, paragraph 41(f) of that decision states that non-Annex I Parties shall submit a BUR every two years, either as a summary of parts of their NC in the year in which the NC is submitted or as a stand-alone update report.

3. Further, according to paragraph 58(a) of the same decision, the first round of ICA is to commence for non-Annex I Parties within six months of the submission of the Parties' first BURs. The frequency of developing country Parties' participation in subsequent rounds of ICA, depending on their respective capabilities and national circumstances, and the special flexibility for small island developing States and the least developed country Parties, will be determined by the frequency of the submission of BURs.

4. Andorra submitted its first BUR on 19 December 2014, which was analysed by a TTE in the first round of technical analysis of BURs from non-Annex I Parties, conducted from 18 to 22 May 2015. After the publication of its summary report, Andorra participated in the second workshop for the facilitative sharing of views, convened in Marrakech on 10 November 2016.

5. This summary report presents the results of the technical analysis of the second BUR of Andorra undertaken by a TTE in accordance with the provisions on the composition, modalities and procedures of the TTE under ICA contained in the annex to decision 20/CP.19.

B. Process overview

6. Andorra submitted its second BUR on 2 August 2017, which is more than two years after the submission of the first BUR. During the technical analysis, the Party clarified that capacity constraints, including lack of technical expertise, resulted in the delay.

7. The technical analysis of the BUR took place from 4 to 8 December 2017 in Bonn and was undertaken by the following TTE, drawn from the UNFCCC roster of experts on the basis of the criteria defined in decision 20/CP.19, annex, paragraphs 2–6: Mr. Ménouer Boughedaoui (former member of the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention from Algeria), Ms. Marjorie Doudnikoff (France), Mr. Xiang Gao (China), Mr. Ghislain Hippolyte Sabin Guendehou (Benin), Ms. Lisa Hanle (United States of America), Ms. Gherghita Nicodim (Romania) and Mr. Marius Taranu (Republic of Moldova). Mr. Guendehou and Ms. Nicodim were the co-leads. The technical analysis was coordinated by Ms. Alma Jean, Mr. Sohel Pasha and Mr. Simon Wear (secretariat).

8. During the technical analysis, in addition to the written exchange, through the secretariat, to provide technical clarifications on the information reported in the BUR, the TTE and Andorra engaged in consultation[1] on the identification of capacity-building needs for the preparation of BURs and participation in the ICA process. Following the technical analysis of Andorra's second BUR, the TTE prepared and shared a draft summary report with Andorra on 13 March 2018 for its review and comment. Andorra, in turn, provided its feedback on the draft summary report on 8 June 2018.

[1] The consultation was conducted via videoconferencing.

9. The TTE responded to and incorporated the Party's comments referred to in paragraph 8 above and finalized the summary report in consultation with Andorra on 3 August 2018.

II. Technical analysis of the biennial update report

A. Scope of the technical analysis

10. The scope of the technical analysis is outlined in decision 20/CP.19, annex, paragraph 15, according to which the technical analysis aims to, without engaging in a discussion on the appropriateness of the actions, increase the transparency of mitigation actions and their effects and shall entail the following:

(a) The identification of the extent to which the elements of information listed in paragraph 3(a) of the ICA modalities and guidelines (decision 2/CP.17, annex IV) have been included in the BUR of the Party concerned (see chapter II.B below);

(b) A technical analysis of the information reported in the BUR, specified in the UNFCCC reporting guidelines on BURs (decision 2/CP.17, annex III), and any additional technical information provided by the Party concerned (see chapter II.C below);

(c) The identification, in consultation with the Party concerned, of capacity-building needs related to the facilitation of reporting in accordance with the UNFCCC reporting guidelines on BURs and to participation in ICA in accordance with the ICA modalities and guidelines, taking into account Article 4, paragraph 3, of the Convention (see chapter II.D below).

11. The remainder of this chapter presents the results of each of the three parts of the technical analysis of Andorra's BUR outlined in paragraph 10 above.

B. Extent of information reported

12. The elements of information referred to in paragraph 10(a) above include the national GHG inventory report; information on mitigation actions, including a description of such actions, an analysis of their impacts and the associated methodologies and assumptions, and the progress made in their implementation; information on domestic MRV; and information on support needed and received.

13. According to decision 20/CP.19, annex, paragraph 15(a), in undertaking the technical analysis of the submitted BUR, the TTE is to identify the extent to which the elements of information listed in paragraph 12 above have been included in the BUR of the Party concerned. The TTE considers that the reported information is mostly consistent with the UNFCCC reporting guidelines on BURs. Specific details on the extent of the information reported for each of the required elements are provided in annex I.

14. The TTE notes improvements in the reporting in the second BUR compared to the first BUR. Information on GHG inventories, mitigation actions and their effects, needs and support reported in the second BUR demonstrates that the Party has taken into consideration the areas for enhanced transparency noted by the previous TTE in the summary report on the technical analysis of the first BUR. These include accurate allocation of emissions from biomass burning in the energy sector, correction of errors in AD for cropland and livestock in the AFOLU sector, inclusion of the nature of mitigation actions and the GHG emission projection drivers, and information on finance, technology and capacity-building. Andorra identified the areas for enhanced transparency noted by the previous TTE in the first BUR that were not addressed in the second BUR as areas for enhancing national capacity.

C. Technical analysis of the information reported

15. The technical analysis referred to in paragraph 10(b) above aims to increase the transparency of mitigation actions and their effects, without engaging in a discussion on the appropriateness of those actions. Accordingly, the technical analysis focused on the transparency of the information reported in the BUR.

16. For information reported on national GHG inventories, the technical analysis also focused on the consistency of the methods used for preparing those inventories with the appropriate methods developed by the IPCC and referred to in the UNFCCC reporting guidelines on BURs.

17. The results of the technical analysis are presented in the remainder of this chapter.

1. Information on national circumstances and institutional arrangements relevant to the preparation of national communications on a continuous basis

18. As per the scope defined in paragraph 2 of the UNFCCC reporting guidelines on BURs, the BUR should provide an update to the information contained in the most recently submitted NC, including information on national circumstances and institutional arrangements relevant to the preparation of NCs on a continuous basis. In their NCs, non-Annex I Parties report on their national circumstances following the reporting guidance contained in decision 17/CP.8, annex, paragraphs 3–5.

19. In accordance with decision 17/CP.8, annex, paragraph 3, Andorra reported in its second BUR information on its national circumstances related to geography, climatology and climate evolution, hydrology and water resources, demography, economy (agriculture, industry, energy, services and tourism), transport and communication network. Andorra is a small landlocked country in the Pyrenees mountains with tourism being the pillar of the economy and contributing 60 per cent of GDP. Energy and forestry also play key roles in the economy; the energy sector depends heavily on fossil fuel and the importation of electricity. In this regard, Andorra is implementing a number of actions to reduce the consumption of fossil fuel. The forest land area covers 39 per cent of the country and has slightly increased by 2 per cent since 1990, mainly due to the conversion of cropland.

20. Andorra transparently described in its BUR the existing institutional arrangements relevant to the preparation of its NCs and BURs on a continuous basis. The description covers key aspects of the institutional arrangements, such as the legal status and roles and responsibilities of the overall coordinating entity; the involvement and roles of other institutions and experts; and QA/QC procedures.

21. The TTE noted that in Andorra's second BUR information was reported on the improvement made to the institutional arrangements for the preparation and submission of NCs and BURs on a continuous basis. In 2015, Andorra established its new Energy and Climate Change Agency to oversee energy and climate change as part of the institutional arrangements. It also identified in its BUR the coordinating institution, the General Directorate of the Environment and Sustainable Development, and the other governmental institutions, private sector organizations, non-governmental organizations, national experts and consultants involved in the process, including their individual roles and responsibilities. Andorra set up three working groups, namely for inventory and mitigation, vulnerability and adaptation, and cross-cutting matters (such as education and awareness-raising, technology needs assessment, research and systematic observation, and capacity-building). The national institutions involved in the working groups and the roles and responsibilities of experts were described in the BUR. During the technical analysis, Andorra clarified that the human resources available to manage the work of the three working groups are linked to the national circumstances of the country (e.g. small size) and have allowed Andorra to organize, so far, efficient cooperation within working groups and between working groups and different stakeholders.

22. The previous TTE noted areas where the transparency of the reporting on institutional arrangements could be further enhanced in Andorra's first BUR. The present

TTE noted that Andorra included relevant information in its second BUR, and it commends the Party for enhancing the transparency of its reporting.

23. The reporting on domestic MRV arrangements in Andorra's second BUR was not clear. Andorra reported that one of the roles of the inventory subgroup is to launch a process to conceptualize an MRV system. During the technical analysis, Andorra clarified that the Party needed support to enable the experts to have a better understanding of MRV and to develop an MRV system.

2. National greenhouse gas emissions by sources and removals by sinks

24. As indicated in table 1 in annex I, Andorra reported information on its GHG inventory in its BUR mostly in accordance with paragraphs 3–10 of the UNFCCC reporting guidelines on BURs and paragraphs 8–24 of the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties, contained in the annex to decision 17/CP.8.

25. Andorra submitted its second BUR in 2017 and the GHG inventory reported covers the years 1990, 1995, 2000, 2005 and 2010–2013, which is consistent with the requirements for the reporting time frame. In the second BUR, Andorra reported that the inventory in the first BUR was recalculated for all years, taking into account the changes detected during the QA/QC process. These changes include the correct allocation of emissions from biomass burning in the energy sector and the correction of errors in AD for cropland and livestock. During the technical analysis, Andorra further informed the TTE of its plans to consolidate the AD of the GHG inventory every four years, which will coincide with the submission of its subsequent NC in 2020. The TTE commends Andorra for reporting on the changes between the first and the second BURs.

26. GHG emissions and removals for the time series were estimated using a tier 1 methodology from the 2006 IPCC Guidelines and applying the IPCC inventory software.

27. With regard to the methodologies used, information was not reported in the BUR clearly enough to enable the TTE to analyse the methodologies applied or the data used by the Party. During the technical analysis, Andorra provided the database generated from the application of the IPCC inventory software, which contains all the inventory data. The database, together with the information reported in the second BUR, enabled the TTE to better understand the information reported, particularly the specific methodology, tier levels and sources of AD and EFs used for each category and subcategory. During the technical analysis, Andorra informed the TTE that the database generated from the application of the IPCC inventory software will be provided as supplementary material to its third BUR, which it plans to submit in 2019.

28. The total GHG emissions for 2013 reported in the BUR, including and excluding AFOLU, amounted to 381.79 and 509.08 Gg CO_2 eq, respectively, an increase of 36.9 and 24.7 per cent, respectively, since 1990 (278.93 Gg CO_2 eq and 408.24 Gg CO_2 eq, respectively). The GHG emissions reported for 2013 include 490.36 Gg CO_2, 5.93 Gg CO_2 eq CH_4, 10.17 Gg CO_2 eq N_2O and 2.63 Gg CO_2 eq SF_6. Andorra did not report emissions of HFCs or PFCs. During the technical analysis, the Party clarified that emissions of those gases were not reported because of a lack of data. However, the Party highlighted that it will continue the data-collection activity started in 2011. Andorra is working to approve the Kigali Amendment to the Montreal Protocol in 2018 and expects to report emissions of HFCs and PFCs in the following years.

29. The Party did not report information on GHG precursors in its second BUR. During the technical analysis, Andorra clarified that emissions of NOx, CO, NMVOCs and SOx were not estimated owing to lack of data and capacity to understand the methodologies to estimate and report on those precursors.

30. Andorra used the IPCC inventory software applying the 2006 IPCC Guidelines and reported the summary tables and short summary tables generated by the software, which contains inventory data for each sector, category and subcategory. The information reported is comparable with the reporting provisions for table 3.A.2 to the IPCC good practice guidance for LULUCF.

31. Andorra provided sectoral and summary tables in its BUR based on information generated from using the 2006 IPCC Guidelines. In some cases the numerical value of zero is reported, and in others a numerical value is not reported. The TTE noted that consistent with decision 17/CP.8, annex, paragraph 22, where relevant, the use of notation keys to report information in the sectoral and summary tables could enable the TTE to better understand the information reported.

32. The shares of emissions that different sectors contributed to the total GHG emissions excluding AFOLU in 2013 are energy, 98.1 per cent; industrial processes, 0.5 per cent; and waste, 1.4 per cent. AFOLU was a net sink.

33. GHG emissions in 2013 from the energy sector amounted to 493.37 Gg CO_2 eq, representing an increase of 25.5 per cent since 1990. The TTE noted that the categories reported by Andorra in the energy sector included manufacturing industries and construction, transport and other sectors (commercial/institutional and residential). The TTE noted that clarifying why other categories (e.g. energy industries, fugitive emissions from fuel) were not reported could facilitate a better understanding of the information reported on the different sectors.

34. Industrial process emissions in 2013 amounted to 2.74 Gg CO_2 eq, with the only source category reported being 2.G.1.b use of electrical equipment for 2011, 2012 and 2013. It was not clear whether emissions for other categories occurred. During the technical analysis, Andorra confirmed that for other categories emissions do not occur in the country.

35. Since Andorra used the 2006 IPCC Guidelines, it reported emissions and removals from the AFOLU sector. The sector was a net sink throughout the entire time series reported by Andorra. Net removals fluctuated between –129.03 CO_2 eq in 2010 and –121.31 Gg CO_2 eq in 2013. The net removals in 2013 represented 31.8 per cent of total emissions including AFOLU. The main gases reported were CO_2, CH_4 and direct and indirect N_2O emissions from soils. Most of the EFs used by Andorra were defaults from the 2006 IPCC Guidelines. The TTE commends Andorra for its improvement plan referred to in response to an area for technical clarification, which states that it is working to improve the land-use analysis by using an algorithmic treatment of satellite images that would improve land identification and classification.

36. For the waste sector, Andorra reported emissions of 6.99 Gg CO_2 eq in 2013, with incineration and open burning of waste and wastewater treatment and discharge being key categories. Emissions from the waste sector do not vary significantly across the time series reported by Andorra.

37. Andorra included in its second BUR an NIR containing information on an update of its first BUR, which also addressed anthropogenic emissions and removals for the years 1990, 1995, 2000, 2005, 2010, 2011, 2012 and 2013. The update was carried out for all years using the methodologies contained in the 2006 IPCC Guidelines, taking into account proper allocation of emissions and correction of errors, thus generating a consistent eight-year time series. The TTE commends the Party for the use of the more recent 2006 IPCC Guidelines.

38. Andorra described in its BUR the institutional framework for the preparation of its 2013 GHG inventory. The Ministry of Environment, Agriculture and Sustainable Development is the government body responsible for climate change policies and is also responsible for the Party's GHG inventory. The TTE could clearly identify the roles and responsibilities within the institutional framework. The information reported indicates that the QA process was conducted by the team lead of the GHG inventory team and not by an external expert.

39. Andorra reported a key category analysis performed using both level and trend analysis. The BUR provides information on QA/QC measures for all sectors. The information reported is clear and facilitated a clear understanding of how Andorra's key category analysis was performed.

40. Andorra reported information on CO_2 fuel combustion using only the sectoral approach. The information reported did not clearly outline why the reference approach was not applied. During the technical analysis, the Party clarified that the format of available

data did not facilitate the use of the reference approach, and therefore estimated CO_2 emissions using the reference approach will be included in the next BUR submission. The TTE noted that including this information in the BUR could facilitate a better understanding of the information reported on CO_2 fuel combustion.

41. Information was not reported on international aviation and marine bunker fuels. During the technical analysis, Andorra stated that there is no international aviation (only domestic flights operate) or international marine bunkering (no access to coast, ocean or navigable rivers) in the country.

42. Andorra reported information on its use of GWP values consistent with those provided by the IPCC in its Second Assessment Report based on the effects of GHGs for a 100-year time-horizon.

43. Since Andorra used the IPCC inventory software, it generated uncertainty estimates associated with emissions and removals for all categories and gases reported in the inventory using the tier 1 approach. Uncertainty values associated with the AD and EFs used were defaults from the 2006 IPCC Guidelines. The results obtained, as reported in the BUR, revealed that the level uncertainty for emissions ranges from 5.96 per cent (for 2005) to 6.72 per cent (for 1995) and the trend uncertainty (for between 1990 and 2013) is 8.59 per cent. The TTE commends Andorra for providing in its BUR detailed information on the selected uncertainty values for AD and EFs and the reasons for their selection.

44. The TTE noted that the transparency of the information reported could be further enhanced by addressing the areas noted in paragraphs 27, 28, 29, 31, 33 and 40 above, which could facilitate a better understanding of the information reported.

45. The previous TTE noted where the transparency of the reporting on emissions of HFCs and PFCs, QA/QC, international aviation and marine bunkers, and land identification and representation could be further enhanced in the first BUR. The present TTE noted that Andorra took into consideration those areas for improvement and commends the Party for this.

3. Mitigation actions and their effects, including associated methodologies and assumptions

46. As indicated in table 2 in annex I, Andorra reported in its BUR, mostly in accordance with paragraphs 11–13 of the UNFCCC reporting guidelines on BURs, information on mitigation actions and their effects, to the extent possible.

47. The Party reported that climate change, including mitigation, has been integrated into its development plans. The information reported provides a comprehensive overview of the Party's mitigation actions and their effects, including the national context. According to Andorra, the projected GHG emissions are based on the estimates of emissions and removals presented in the GHG inventory of its first BUR and on the same hypothesis related to the drivers of the projections, which are the GDP and the population data corresponding to 2014. The expected results of the mitigation actions are estimated up until 2050.

48. In its BUR, the Party reported its mitigation actions in the context of three scenarios until 2050: 'business as usual' (without measures), 'with existing measures' (mitigation actions undertaken) and 'with additional measures' (planned mitigation actions); however, detailed reporting in the tabular format was done only for the 'with additional measures' scenario. Consistent with decision 2/CP.17, annex III, paragraph 12(a), Andorra reported on mitigation actions in the 'with additional measures' scenario, including description, coverage (i.e. sector and gases), objectives, quantitative goals and progress indicators. Andorra reported information related to the nature of actions. The Party characterized four types of mitigation actions: operational, financial, regulatory, and research or educational.

49. In these scenarios, mitigation actions are reported for five economic sectors: energy, industry, agriculture and livestock, land use and land-use change, and waste. The Party also reported the time frames and assumptions for each of the scenarios, which are outlined in table 14 of its BUR. Most of the mitigation actions in the scenarios focus on the energy and waste sectors. However, the calculation methodologies used to develop the three scenarios

were not reported. During the technical analysis, Andorra clarified that the projections were developed by using linear regression based on ratios observed in the population fluctuation. The TTE commends Andorra for reporting that information, but noted that clarifying the methodologies used to develop the scenarios would facilitate a better understanding of the information reported thereon.

50. The projected GHG emission reductions (for all sectors together) under the 'business as usual' scenario are reported as 643.47 Gg CO_2 eq in 2050.

51. In the energy sector, 2005 was reported as the reference year; the projected emissions per capita in this sector are until 2050. For agriculture and livestock, the reference year for the 'business as usual' scenario is 2000. In the industry sector, emissions will remain constant until 2050, according to this scenario, from 2011 onward. Andorra did not report information on the results achieved for industry, but indicated that this was because of the unavailability of the necessary data. In the land use and land-use change sector, the annual removals over the period 2012–2050 will be 126.99 Gg CO_2, estimated as the average of the period 1990–2011. For the waste sector, the categories considered were incineration of waste and wastewater treatment, with reference years 1995 and 2005, respectively. The projected emissions per capita in these categories are until 2050.

52. In the 'with existing measures' scenario the projected emission reduction by 2050 amounts to 576.10 Gg CO_2 eq, corresponding to a reduction by 10.5 per cent in comparison with the 'business as usual' scenario. This achievement will result from the implementation of the mitigation actions in the waste sector (wastewater treatment and a national scheme of waste management) that are expected to achieve GHG emission reductions in 2050 of 57.7 per cent and 39.4 per cent, respectively, and contribute to overall emission reduction, in comparison with the 'business as usual' scenario. The mitigation actions implemented after 2011 contributed to emission reductions of 14.8 per cent in 2013 in relation to the 'business as usual' scenario. This scenario does not consider mitigation actions in the economic sectors of energy, industry, agriculture and livestock, and land use and land-use change. For the energy and the agriculture and livestock sectors, the start year for the projected emissions is changed to 2013 from 2011.

53. Most of Andorra's mitigation actions fall within the 'with additional measures' scenario. All the mitigation actions under this scenario are planned and relate to the energy and waste sectors (which accounted for 97 and 1.4 per cent, respectively, of national emissions in 2013). No additional mitigation actions are planned in the economic sectors of industry, agriculture and livestock, or land use and land-use change due to the small contribution of these sectors to GHG total emissions. According to the short summary table in annex VI, these sectors amounted to less than 3 per cent in total GHG emissions in 2013, without the land-use sector. The Party reported information on the objectives and expected outcomes of the mitigation actions. While the Party reported the results achieved in terms of estimated outcomes for the sectors outlined below, information on the estimated emission reductions of the individual mitigation actions was not reported. During the technical analysis, Andorra clarified that a study conducted in 2017 will enable experts to estimate the emission reduction for the rehabilitation of buildings and the national electricity production increase, and this information will be incorporated into the next BUR. The TTE commends Andorra for this action.

54. For the energy sector, Andorra reported that the actions planned are derived from its white paper on energy, including energy policies in country until 2030 and 2050. Information is reported on the specific steps envisaged to achieve objectives with regard to energy supply and demand relating to reducing energy dependence by reducing the import of electricity and the consumption of diesel fuel used for heating. The Party plans to construct three cogeneration plants with a total annual production of 55,000 MWh, a wind farm with a total capacity of 1 MW with an annual production of 12,000 MWh and a photovoltaic park that will achieve a production of 5,600 MWh in 2030. The use of biomass will be increased to 8,000 t per year, producing thermal energy equivalent to 30 GWh annually. Regarding the transport sector, the Party reported that the objective is to increase the number of electric cars by 50 per cent by 2050, which will reduce emissions from domestic vehicles. The Party reported that in 2014 the Government launched a programme allocating EUR 700,000 for the purchase of low-emission vehicles (ranging

from 80 to 160 g CO_2/km). Andorra reported three categories of planned actions in the energy sector: rehabilitation of buildings, increase the national energy production and increase the fleet of electric and low-emission vehicles.

55. Andorra reported on the methodologies, assumptions and progress of the implementation of its mitigation actions. The Party reported the objective of saving 392 GWh by 2050 from the rehabilitation of buildings, which will need about EUR 608 million for implementation. The Party also reported on the individual actions planned in this area, but emission reductions were not estimated. During the technical analysis, Andorra clarified that it is working to improve the calculation of the results to be achieved by the rehabilitation of buildings and that since 2016 a mitigation action has been planned and a centralized district heating system will replace the individual systems. The Party further clarified that no emission reductions were estimated as it is difficult to predict the number of homes that will be connected to the system and the effect of energy replacement. However, the Party indicated that GHG emission reductions will be achieved in the planned cogeneration plants as part of a programme that facilitates the replacement of liquefied petroleum gas with liquefied natural gas, the latter having a lower EF. During the technical analysis the Party clarified that the heat production is expected to be the equivalent of 70,000 MWh per year, contributing to 24 per cent of emission reductions in the energy sector.

56. Andorra also reported on the results achieved for the mitigation actions to increase the energy efficiency in buildings and implement the centralized district heating system and the actions to increase national energy production and reduce external energy dependence. The estimated outcomes were reported as national energy production of 200 GWh by 2030 and heating diesel consumption of 276 TJ by 2030. Andorra also expects to reduce the importation of electric power to 461 GWh by 2029 to values comparable with those in 2004.

57. Regarding the mitigation actions in road transportation within the energy sector, Andorra reported in the 'with additional measures' scenario the goal to increase the number of electric vehicles by 50 per cent by 2050. The Party reported two sub-scenarios, depending on the hypothesis relating to the effect of electric vehicles on the share of hydrocarbons sold in the country: (1) reduction in expected consumption for all fuel imports used by both the resident population and the population in transit (overall projected GHG emissions under this 'with additional measures' scenario are reported as 206.17 Gg CO_2 eq in 2050, which is a 68 per cent reduction compared with the 'business as usual' scenario), and (2) a 50 per cent reduction in expected consumption compared with the share of imports related to resident consumption (overall projected GHG emissions under this 'with additional measures' scenario are reported as 386.52 Gg CO_2 eq in 2050, which is a 39.9 per cent reduction compared with the 'business as usual' scenario). The steps envisaged to achieve the objective in the two sub-scenarios include a new law on electric vehicles providing financial aid to buy and possibility to test electric vehicles. However, the estimated emission reductions as a result of the implementation of these actions were not reported. During the technical analysis, Andorra clarified that since 2016 the road transportation actions envisaged have been exclusively oriented to electric and hybrid vehicles.

58. Andorra reported that for the waste sector the target in the 'with additional measures' scenario is to reuse and recycle 45 per cent of waste and to recover 5 per cent from organic waste by 2050. The Party expects to achieve GHG emission reductions of 57.7 and 39.4 per cent as a result of wastewater treatment and the national waste management scheme, respectively, by 2050. The measures to be put in place for waste management include the periodic characterization of household waste composition, the identification of alternative means of managing organic waste and concrete actions to reuse and recycle collected waste. Based on the existing mitigation actions Andorra reported information on its carbon footprint for 2013 (3.92 t CO_2 eq per capita) taking into account the analysis of its population, including both residents and tourists. The Party reported an expected decrease of up to 1.54 and 2.89 t CO_2 eq per capita by 2050 for the sub-scenarios referred to in paragraph 57 above, respectively.

59. Andorra did not report information on international market mechanisms. During the technical analysis, Andorra stated that it had not used international mechanisms.

60. Andorra reported information on its domestic MRV arrangements consistent with decision 2/CP.17, annex III, paragraph 13. The information reported indicates that Andorra has in place a domestic MRV system for mitigation actions, but institutional reorganization is ongoing. The Party reported that the Energy and Climate Change Agency, under the General Directorate of the Environment and Sustainable Development, will coordinate the implementation of the Convention. In that context, the Government nominated a working group on inventory and mitigation to launch the MRV system. The information reported does not clearly reflect additional details on institutional arrangements. During the technical analysis, the Party clarified that the Energy and Climate Change Agency is the body responsible for the coordination and supervision of the system and is responsible for monitoring and verifying the implementation of mitigation actions. Andorra also clarified that the draft law on energy transition and climate change facilitates the creation of a national commission that will oversee the programmes of the national energy strategy and the fight against climate change. The commission will revise, modify and adapt the objectives of strengthening the monitoring and verification of climate change actions in Andorra.

61. The TTE noted that the transparency of the information reported could be enhanced by addressing the areas noted in paragraphs 49, 51, 53, 55 and 57 above, which could enable the TTE to better understand the information reported.

62. The previous TTE noted where the transparency of the reporting on the nature of the mitigation actions and on sectoral GHG emission drivers could be further enhanced in the first BUR. The present TTE noted that Andorra took into consideration those areas for improvement in its second BUR, and commends the Party for enhancing the transparency of the information reported.

4. Constraints and gaps, and related technology, financial, technical and capacity-building needs, including a description of support needed and received

63. As indicated in table 3 in annex I, Andorra reported in its BUR, partially in accordance with paragraphs 14–16 of the UNFCCC reporting guidelines on BURs, information on finance, technology and capacity-building needs and support received.

64. Andorra reported information on financial resources needed, amounting to EUR 897 million, to implement some mitigation projects, including building energy efficiency and power generation from renewable energy. However, the needs for capacity-building or any other support needs for reporting gaps and constraints in NCs and BURs or for technology transfer were not reported. The Party reported that it had not benefited from technical workshops on GHG inventories. During the technical analysis, Andorra highlighted that enrolling its national experts in the UNFCCC training courses could strengthen its capacities. Further, Andorra expressed the need for capacity-building for developing its MRV system and improving the inventory system.

65. Andorra did not clearly report information on the support received for preparing its second BUR. During the technical analysis, the Party clarified that it had not received any support for the preparation of its GHG inventory, first NC or second BUR. However, it had received technical assistance from the United Nations Environment Programme to prepare the project proposal for the first NC, which was submitted to the GEF as an enabling activity.

66. During the technical analysis, Andorra informed the TTE that a technology needs assessment had not been conducted, as it lacked the required capacity and financial and technical support. The TTE notes that this information could be useful to understand the circumstances of Andorra with regard to support needs.

5. Any other information

67. Andorra reported some information on adaptation actions that may lead to GHG emission reductions, but did not include estimations of such reductions. During the

technical analysis, the Party informed the TTE that adaptation measures were implemented via programmes developed with the intention of enhancing adaptive capacity and, as such, it had not estimated the results achieved. The Party is setting up a process to quantify, on an ongoing basis, the CO_2 emission impacts of such measures.

D. Identification of capacity-building needs

68. In consultation with Andorra, the TTE identified the following capacity-building needs related to the facilitation of the preparation of subsequent BURs and participation in ICA:

(a) Capacity-building needs related to GHG inventories:

(i) Provide training workshops on reporting provisions with regard to the GHG inventory;

(ii) Develop technical capacity to use remote sensing techniques for land identification and classification;

(iii) Build capacity for identifying and using surrogate data (e.g. for drivers) to fill data gaps in order to estimate and report on fluorinated gases through participation in UNFCCC training courses;

(iv) Provide training through UNFCCC courses on uncertainty assessment associated with GHG emissions and removals, AD, EFs and other parameters;

(v) Enhance the capacity to apply IPCC methodologies to estimate CO_2 emissions using the reference approach and to explain the differences between the reference and sectoral approach;

(vi) Develop the technical capacity to understand the methodologies and to collect data to estimate and report on CO, NOx, NMVOCs and SOx;

(b) Capacity-building needs related to mitigation actions and their effects:

(i) Provide training on assessing and reporting mitigation actions and their effects;

(ii) Enhance the capacity to estimate emission reductions resulting from mitigation actions and improve the communication and dissemination of information related to mitigation projects in Andorra to attract investors;

(c) Capacity-building needs related to cross-cutting issues:

(i) Enhance the capacity of staff and national experts to assess, identify and report on constraints and gaps related to the preparation of BURs;

(ii) Enhance the national capacity to conceptualize a domestic MRV system and its implementation;

(iii) Reinforce coordination among all institutions involved in the preparation of BURs and NCs and strengthen the capacity to mainstream climate change in the development policies of Andorra;

(d) Capacity-building needs related to needs and support received:

(i) Strengthen the capacity of institutions, staff and national experts to assess, identify and report on financial, technical and capacity-building needs;

(ii) Increase knowledge of the procedures for accessing financial support from the GEF and capacity-building support from the UNFCCC;

(iii) Enhance the capacity of staff and national experts to assess the financial resources, technology transfer, capacity-building and technical support received and to report this information in the BUR;

(iv) Enhance the technical capacity of staff and national experts to conduct technology needs assessment;

(v) Enhance the technical capacity of staff to develop and implement a national MRV system, in particular in areas related to GHG inventories and mitigation actions.

69. The TTE notes that, in addition to those identified during the technical analysis, Andorra reported the following capacity-building needs in its second BUR:

(a) Strengthen national capacity to prepare the GHG inventory and the inventory report for the purpose of the BUR;

(b) Strengthen institutional and human capacity for the fulfilment of obligations under the Convention;

(c) Enhance the national capacity to establish a systematic and continuous approach to raising public awareness of climate change.

III. Conclusions

70. The TTE conducted a technical analysis of the information reported in the second BUR of Andorra in accordance with the UNFCCC reporting guidelines on BURs. The TTE concludes that the reported information is mostly consistent with the UNFCCC reporting guidelines on BURs and provides an overview of national circumstances and institutional arrangements relevant to the preparation of NCs on a continuous basis; the national inventory of anthropogenic emissions by sources and removal by sinks of all GHGs not controlled by the Montreal Protocol, including an NIR; mitigation actions and their effects, including associated methodologies and assumptions; constraints and gaps and related financial, technical and capacity-building needs, including a description of support needed and received; the level of support received to enable the preparation and submission of BURs; and other information relevant to the achievement of the objective of the Convention. During the technical analysis, additional information was provided by Andorra on the GHG inventory, mitigation actions and their effects, capacity-building and support needed and received. The TTE concluded that the information analysed is mostly transparent.

71. Andorra reported information on the institutional arrangements relevant to the preparation of BURs. It has improved the institutional arrangements by mandating the Energy and Climate Change Agency under the supervision of the General Directorate of the Environment and Sustainable Development to take over all activities related to climate change in Andorra. It has taken significant steps to create institutional arrangements by setting up three working groups on inventory and mitigation, vulnerability and adaptation, and cross-cutting issues to prepare NCs and BURs. The TTE commends Andorra for the progress made on the institutional arrangements.

72. The TTE noted that Andorra did not report in the BUR on its plan to develop the overall domestic MRV system or its capacity-building needs. During the technical analysis, the Party stated that it was carrying out legal arrangements to establish a domestic MRV system.

73. In its second BUR, Andorra reported information on its national GHG inventory for 1990, 1995, 2000, 2005 and 2010–2013. This included GHG emissions and removals of CO_2, CH_4, N_2O and SF_6 for all relevant sources and sinks. The GHG precursors were not estimated owing to lack of data and knowledge of methodologies to estimate those gases. Estimates of fluorinated gases were not provided owing to difficulties in obtaining the necessary data, as clarified by the Party during the technical analysis. The inventory was developed on the basis of the 2006 IPCC Guidelines. The total GHG emissions for 2013 were reported as 509.08 CO_2 eq (excluding AFOLU) and 381.79 CO_2 eq (including AFOLU). Ten key categories were identified, with CO_2 and road transportation and forest land remaining forest land identified as the main gas and key categories, respectively.

74. Andorra reported information on mitigation actions and their effects in the 'with existing measures' scenario and added mitigation goals in the 'with additional measures' scenario. Mitigation actions are reported for five economic sectors: energy, industry, agriculture and livestock, land use and land-use change, and waste. Most of the mitigation actions for the scenarios are focused on the energy and waste sectors. The projected GHG emission reductions reported under the 'with existing measures' scenario are 576.10 Gg CO_2 eq by 2050 (10.5 per cent reduction compared with the 'business as usual' scenario) and those reported under the 'with additional measures' scenario are 206.10 Gg CO_2 eq by 2050, which is the most optimistic case (68 per cent reduction compared with the 'business as usual' scenario). In the energy and waste sectors, the GHG emissions will be reduced in 2050 by 57.7 and 47.6 per cent, respectively, in comparison with the 'business as usual' scenario. In the waste sector the wastewater treatment and the waste management categories will account for emission reductions of 57.7 and 39.4 per cent, respectively, in comparison with the 'business as usual' scenario.

75. Andorra reported information on key constraints, gaps and related needs. The BUR includes information that clearly identifies the needs related to the development of the national GHG inventory. During the technical analysis, Andorra provided additional information on key challenges and needs, such as designing and implementing an MRV system and conducting a technology needs assessment. Information on support received and needed was reported specific to the GHG inventory and mitigation actions. Information on technology needs and technology needed and received was not reported in the BUR.

76. The TTE, in consultation with Andorra, identified 16 capacity-building needs, listed in chapter II.D above, that aim to facilitate reporting in accordance with the UNFCCC reporting guidelines on BURs and participation in ICA in accordance with the ICA modalities and guidelines, taking into account Article 4, paragraph 3, of the Convention. Andorra considers all the capacity-building needs as a priority (immediate or medium term), except for that related to enhancing the technical capacity of staff and national experts to conduct technology needs assessment, which is considered a long-term priority.

Annex I

Extent of the information reported by Andorra in its second biennial update report

Table 1
Identification of the extent to which the elements of information on greenhouse gases are included in the second biennial update report of Andorra

Decision	*Provision of the reporting guidelines*	*Yes/partly /no/NA*	*Comments on the extent of the information provided*
Decision 2/CP.17, paragraph 41(g)	The first BUR shall cover, at a minimum, the inventory for the calendar year no more than four years prior to the date of the submission, or more recent years if information is available, and subsequent BURs shall cover a calendar year that does not precede the submission date by more than four years.	Yes	Andorra submitted its second BUR in August 2017; the GHG inventory reported is for 1990, 1995, 2000, 2005 and 2010–2013.
Decision 2/CP.17, annex III, paragraph 3	Non-Annex I Parties should submit updates of national GHG inventories according to paragraphs 8–24 in the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties as contained in the annex to decision 17/CP.8.	Yes	Andorra used the 2006 IPCC Guidelines.
Decision 2/CP.17, annex III, paragraph 4	Non-Annex I Parties should use the methodologies established by the latest UNFCCC guidelines for the preparation of NCs from non-Annex I Parties approved by the COP or those determined by any future decision of the COP on this matter.	Yes	Andorra used the 2006 IPCC Guidelines.
Decision 2/CP.17, annex III, paragraph 5	The updates of the sections on the national inventories of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol should contain updated data on activity levels based on the best information available using the Revised 1996 IPCC Guidelines, the *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories* and the IPCC good practice guidance for LULUCF; any change to the EF may be made in the subsequent full NC.	Yes	AD and EFs have been updated for previous years to take into account misallocation of emissions (e.g. for biomass burning for energy purposes) and errors (e.g. for cropland). In addition, the BUR includes inventory data for the years 2012 and 2013.
Decision 2/CP.17, annex III, paragraph 6	Non-Annex I Parties are encouraged to include, as appropriate and to the extent that capacities permit, in the inventory section of the BUR:		
	(a) Tables included in annex 3A.2 to the IPCC good practice guidance for LULUCF;	Yes	Andorra used the 2006 IPCC Guidelines and reported comparable information.
	(b) The sectoral report tables annexed to the Revised 1996 IPCC Guidelines.	Yes	Andorra used the 2006 IPCC Guidelines and reported comparable information.
Decision 2/CP.17, annex III, paragraph 7	Each non-Annex I Party is encouraged to provide a consistent time series back to the years reported in the previous NCs.	Yes	

Decision	*Provision of the reporting guidelines*	*Yes/partly /no/NA*	*Comments on the extent of the information provided*
Decision 2/CP.17, annex III, paragraph 8	Non-Annex I Parties that have previously reported on their national GHG inventories contained in their NCs are encouraged to submit summary information tables of inventories for previous submission years (e.g. for 1994 and 2000).	Yes	Andorra's previous NC, submitted in August 2017, contained the same inventory data as the second BUR. Andorra included summary tables for 1990, 1995, 2000, 2005, 2010 and 2011 in the first BUR and added 2012 and 2013 in the second.
Decision 2/CP.17, annex III, paragraph 9	The inventory section of the BUR should consist of an NIR as a summary or as an update of the information contained in decision 17/CP.8, annex, chapter III (National greenhouse gas inventories), including:		
	(a) Table 1 (National greenhouse gas inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol and greenhouse gas precursors);	Partly	The summary tables generated from the IPCC inventory and reported in the inventory contain comparable information on emissions and removals except for precursors and the use of notation keys.
	(b) Table 2 (National greenhouse gas inventory of anthropogenic emissions of HFCs, PFCs and SF_6).	Partly	SF_6 was reported, but HFCs and PFCs were not. Andorra indicated that HFCs and PFCs were not estimated owing to lack of data.
Decision 2/CP.17, annex III, paragraph 10	Additional or supporting information, including sector-specific information, may be supplied in a technical annex.	Yes	Sectoral tables, summary tables, key category analysis tables, tables on data sources used, and methods and hypotheses used were provided as annexes to the second BUR.
Decision 17/CP.8, annex, paragraph 13	Non-Annex I Parties are encouraged to describe procedures and arrangements undertaken to collect and archive data for the preparation of national GHG inventories, as well as efforts to make this a continuous process, including information on the role of the institutions involved.	Yes	
Decision 17/CP.8, annex, paragraph 14	Each non-Annex I Party shall, as appropriate and to the extent possible, provide in its national inventory, on a gas-by-gas basis and in units of mass, estimates of anthropogenic emissions of:		
	(a) CO_2;	Yes	
	(b) CH_4;	Yes	
	(c) N_2O.	Yes	
Decision 17/CP.8, annex, paragraph 15	Non-Annex I Parties are encouraged, as appropriate, to provide information on anthropogenic emissions by sources of:	Partly	Andorra indicated in the second BUR that the inventory did not cover HFCs and PFCs owing to lack of data. Only SF_6 emissions were estimated and reported.
	(a) HFCs;	No	

Decision	*Provision of the reporting guidelines*	*Yes/partly /no/NA*	*Comments on the extent of the information provided*
	(b) PFCs;	No	
	(c) SF_6.	Yes	
Decision 17/CP.8, annex, paragraph 16	Non-Annex I Parties are encouraged, as appropriate, to report on anthropogenic emission by sources of other GHGs, such as:	No	
	(a) CO;		
	(b) NOx;		
	(c) NMVOCs.		
Decision 17/CP.8, annex, paragraph 17	Other gases not controlled by the Montreal Protocol, such as SOx, included in the Revised 1996 IPCC Guidelines may be included at the discretion of the Parties.	No	
Decision 17/CP.8, annex, paragraph 18	Non-Annex I Parties are encouraged, to the extent possible and if disaggregated data are available, to estimate and report CO_2 fuel combustion emissions using both the sectoral and the reference approach and to explain any large differences between the two approaches.	No	Andorra reported sectoral emissions in line with the 2006 IPCC Guidelines. It did not report emissions using the reference approach.
Decision 17/CP.8, annex, paragraph 19	Non-Annex I Parties should, to the extent possible and if disaggregated data are available, report emissions from international aviation and marine bunker fuels separately in their inventories:	NA	
	(a) International aviation;		
	(b) Marine bunker fuels.		
Decision 17/CP.8, annex, paragraph 20	Non-Annex I Parties wishing to report on aggregated GHG emissions and removals expressed in CO_2 eq should use the GWP provided by the IPCC in its Second Assessment Report based on the effects of GHGs over a 100-year time-horizon.	Yes	
Decision 17/CP.8, annex, paragraph 21	Non-Annex I Parties are encouraged to provide information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol, including a brief explanation of the sources of EFs and AD. If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks that are not part of the Revised 1996 IPCC Guidelines, they should explicitly describe the source and/or sink categories, methodologies, EFs and AD used in their estimation of emissions, as appropriate. Parties are encouraged to identify areas where data may be further improved in future communications through capacity-building:		
	(a) Information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol;	Yes	Andorra used the 2006 IPCC Guidelines.

Decision	*Provision of the reporting guidelines*	*Yes/partly /no/NA*	*Comments on the extent of the information provided*
	(b) Explanation of the sources of EFs;	Yes	The second BUR contains, in annex V, a table on sources of EFs.
	(c) Explanation of the sources of AD;	Yes	The second BUR contains, in annex V, a table on sources of AD.
	(d) If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks that are not part of the Revised 1996 IPCC Guidelines, they should explicitly describe:	NA	Andorra used the 2006 IPCC Guidelines.
	(i) Source and/or sink categories;		
	(ii) Methodologies;		
	(iii) EFs;		
	(iv) AD;		
	(e) Parties are encouraged to identify areas where data may be further improved in future communications through capacity-building.	Yes	Andorra reported the need to build the technical capacity of experts involved in the GHG inventory through participation in UNFCCC training courses and for capacity-building on uncertainty assessment.
Decision 17/CP.8, annex, paragraph 22	Each non-Annex I Party is encouraged to use tables 1 and 2 of the guidelines annexed to decision 17/CP.8 in reporting its national GHG inventory, taking into account the provisions established in paragraphs 14–17. In preparing those tables, Parties should strive to present information that is as complete as possible. Where numerical data are not provided, Parties should use the notation keys as indicated.	Partly	Andorra used the 2006 IPCC Guidelines. Sectoral and summary tables generated by the IPCC inventory software with comparable information were provided in the annexes to the second BUR, except for the use of notation keys.
Decision 17/CP.8, annex, paragraph 24	Non-Annex I Parties are encouraged to provide information on the level of uncertainty associated with inventory data and their underlying assumptions, and to describe the methodologies used, if any, for estimating these uncertainties:		
	(a) Level of uncertainty associated with inventory data;	Yes	
	(b) Underlying assumptions;	Yes	
	(c) Methodologies used, if any, for estimating these uncertainties.	Yes	

Notes: The parts of the UNFCCC reporting guidelines on BURs on reporting information on GHG emissions by sources and removals by sinks in BURs are contained in decision 2/CP.17, paragraphs 3–10 and 41(g). Further, as per paragraph 3 of those guidelines, non-Annex I Parties are to submit updates of their national GHG inventories in accordance with paragraphs 8–24 of the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties, contained in the annex to decision 17/CP.8. The scope of such updates should be consistent with the non-Annex I Party's capacity and time constraints and the availability of its data, as well as the level of support provided by developed country Parties for biennial update reporting.

Table 2
Identification of the extent to which the elements of information on mitigation actions are included in the second biennial update report of Andorra

Decision	*Provision of the reporting guidelines*	*Yes/partly/no*	*Comments on the extent of the information provided*
Decision 2/CP.17, annex III, paragraph 11	Non-Annex I Parties should provide information, in a tabular format, on actions to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol.	Yes	
Decision 2/CP.17, annex III, paragraph 12	For each mitigation action or group of mitigation actions, including, as appropriate, those listed in document FCCC/AWGLCA/2011/INF.1, developing country Parties shall provide the following information, to the extent possible:		
	(a) Name and description of the mitigation action, including information on the nature of the action, coverage (i.e. sectors and gases), quantitative goals and progress indicators;	Yes	
	(b) Information on:		
	(i) Methodologies;	Partly	Andorra reported its mitigation actions in the context of three scenarios ('business as usual', 'with existing measures' and 'with additional measures'), providing projections of GHG emissions in the long term until 2050. However, the calculation methodologies used to develop the three scenarios were not provided.
	(ii) Assumptions;	Yes	
	(c) Information on:		
	(i) Objectives of the action;	Yes	
	(ii) Steps taken or envisaged to achieve that action;	Yes	
	(d) Information on:		
	(i) Progress of implementation of the mitigation actions;	Yes	
	(ii) Progress of implementation of the underlying steps taken or envisaged;	Partly	Andorra provided information on the steps taken and envisaged for implementing most of the mitigation actions. For some of the steps, it did not clearly distinguish between steps taken, steps already implemented and steps envisaged.
	(iii) Results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible;	Yes	Andorra provided the results expected from the implementation of mitigation actions in the energy and waste sectors. However, the Party did not report information on the impact on GHG emissions of each

Decision	*Provision of the reporting guidelines*	*Yes/partly/no*	*Comments on the extent of the information provided*
			action.
	(e) Information on international market mechanisms.	No	Andorra did not report information on international market mechanisms.
Decision 2/CP.17, annex III, paragraph 13	Parties should provide information on the description of domestic MRV arrangements.	Partly	Andorra reported in chapter 1.3 of its second BUR that the working group on mitigation is responsible for launching the MRV system. However, the Party did not report any further details on the MRV system.

Note: The parts of the UNFCCC reporting guidelines on BURs on the reporting of information on mitigation actions in BURs are contained in decision 2/CP.17, annex III, paragraphs 11–13.

Table 3

Identification of the extent to which the elements of information on finance, technology and capacity-building needs and support received are included in the second biennial update report of Andorra

Decision	*Provision of the reporting requirements*	*Yes/partly/no*	*Comments on the extent of the information provided*
Decision 2/CP.17, annex III, paragraph 14	Non-Annex I Parties should provide updated information on:		
	(a) Constraints and gaps;	Yes	
	(b) Related financial, technical and capacity-building needs.	Partly	Information on financial needs was not reported.
Decision 2/CP.17, annex III, paragraph 15	Non-Annex I Parties should provide:		
	(a) Information on financial resources received, technology transfer and capacity-building received;	Partly	Information on capacity-building and financial resources received was not transparently reported.
	(b) Information on technical support received from the GEF, Parties included in Annex II to the Convention and other developed country Parties, the Green Climate Fund and multilateral institutions for activities relating to climate change, including for the preparation of the current BUR.	Yes	
Decision 2/CP.17, annex III, paragraph 16	With regard to the development and transfer of technology, non-Annex I Parties should provide information on:		
	(a) Technology needs, which are nationally determined;	No	
	(b) Technology support received.	No	

Note: The parts of the UNFCCC reporting guidelines on BURs on the reporting of information on finance, technology and capacity-building needs and support received in BURs are contained in decision 2/CP.17, annex III, paragraphs 14–16.

Annex II

Documents and information used during the technical analysis

A. Reference documents

IPCC. 1997. *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*. JL Houghton, LG Meira Filho, B Lim, et al. (eds.). Paris, France: IPCC/Organisation for Economic Co-operation and Development/International Energy Agency. Available at https://www.ipcc-nggip.iges.or.jp/public/gl/invs1.html.

IPCC. 2000. *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*. J Penman, D Kruger, I Galbally, et al. (eds.). Hayama, Japan: IPCC/Organisation for Economic Co-operation and Development/International Energy Agency/Institute for Global Environmental Strategies. Available at http://www.ipcc-nggip.iges.or.jp/public/gp/english/.

IPCC. 2003. *Good Practice Guidance for Land Use, Land-Use Change and Forestry*. J Penman, M Gytarsky, T Hiraishi, et al. (eds.). Hayama, Japan: Institute for Global Environmental Strategies. Available at http://www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf.html.

IPCC. 2006. *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. S Eggleston, L Buendia, K Miwa, et al. (eds.). Hayama, Japan: Institute for Global Environmental Strategies. Available at http://www.ipcc-nggip.iges.or.jp/public/2006gl.

"Composition, modalities and procedures of the team of technical experts for undertaking the technical analysis of biennial update reports from Parties not included in Annex I to the Convention". Annex to decision 20/CP.19. Available at http://unfccc.int/resource/docs/2013/cop19/eng/10a02.pdf#page=12.

"Modalities and guidelines for international consultation and analysis". Annex IV to decision 2/CP.17. Available at http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf.

"UNFCCC biennial update reporting guidelines for Parties not included in Annex I to the Convention". Annex III to decision 2/CP.17. Available at http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf.

"Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention". Annex to decision 17/CP.8. Available at http://unfccc.int/resource/docs/cop8/07a02.pdf#page=2.

First BUR of Andorra. Available at http://unfccc.int/8722.php.

First NC of Andorra. Available at http://unfccc.int/national_reports/non-annex_i_natcom/items/2979.php.

Summary report on the technical analysis of the first BUR of Andorra. Available at http://unfccc.int/national_reports/non-annex_i_parties/ica/technical_analysis_of_burs/items/10054.php.

B. Additional information provided by the Party

The following documents[1] were provided by the Party in response to requests for technical clarification during the technical analysis:

Climate change; a global phenomenon, for a local action. The case of Andorra. Autumn Meeting of the OSCE, Parliamentary Assembly (OSCE-PA), Ministeri de Medi Ambient, Agricultura i Sostenibilitat, Andorra la Vella, 3-5 October 2017.

Inventari v4. mdb – a document containing the inventory database.

[1] Reproduced as received from the Party.